

REMARKS

I. Drawings

According to the Office Action, the drawings are objected to for allegedly not showing every feature of the invention specified in the claims. In particular, the claimed elements “on-board power supply”, the “demand signal”, and the “supply demand” are alleged to be missing from the drawings. In response, claims 1 and 8 are amended to replace “on-board power supply” with --consuming device--. This element is clearly shown in the drawings as item 19 (Specification, paragraph [00024]). As to the demand signal and supply demand, are clearly shown in the drawings as item 21d (Specification, paragraph [00028]).

II. Specification

According to the Office Action, the specification is objected to for allegedly the following reasons:

The following phrases are alleged to be idiomatic:

“The charging current is permitted to fall briefly or because of inertias and/or dead times of the controlling below the limit value”

In response, the specification is amended so that the above sentence reads as follows: “the charging current is permitted to fall briefly, because of inertias and/or dead times, below the limit value”.

a MOSFET whose heating resistance can be adjusted by controlling a control input of the transistor. However, in contrast to the teaching of German Patent Document DE 19 28 589 C1, the adjustment of the resistance is used for the adjustment of the charging currents.

In response, the specification is amended to remove the last sentence “However, in contrast to the teaching of German Patent Document DE 19 28 589

C1, the adjustment of the resistance is used for the adjustment of the charging currents".

In addition, the specification allegedly fails to provide proper antecedent basis for the claimed subject matter: "on-board power supply" and "detection device." As discussed above, claims 1 and 8 have been amended to replace "on-board power supply" with --consuming device--, which has antecedent basis in the specification (Specification, paragraph [00024]). With respect to the "detection device", it clearly has antecedent basis in the specification as item 29 (Specification, paragraph [00029]).

III. Claim Objections

According to the Office Action, claim 1 is objected to because the phrase "a (motor) vehicle should be replaced by--the vehicle--. In response, claim 1 is amended accordingly.

In addition, claim 6 is objected to because the terms "the additional heater" lacks antecedent basis. In response, claim 6 is amended to replace "the additional heater" with the --additional consuming device--, which has antecedent basis.

Also, the phrase in claim 7 "detecting the charging condition of the vehicle battery which is connected with the vehicle battery" allegedly needs to be corrected. In response, claim 7 is amended to read "detecting the charging condition of the vehicle battery, wherein said detection device is connected to the vehicle battery."

IV. Claim Rejections – 35 U.S.C. 112

According to the Office Action, claims 1-13 stand rejected under 35 U.S.C. 112, second paragraph, for allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. In this regard, it is alleged that the claims are generally narrative and indefinite, and fail to conform to current U.S. Practice.

In particular, it is alleged that the term in claim 1 “electric on-board power” is unclear in view of the terms “vehicle battery” and “generator” also being present in claim 1. As discussed above, the term “electric on-board power” has been replaced with --consuming device--, which makes it clear that the generator supplies electric power to the consuming device as well as a charging current for the vehicle battery.

Also, it is alleged that the terms “charging current” in claim 1 is not clear since according to the figure power flows from the highest voltage (battery or generator) to the load. Applicant respectfully traverses this allegation since it is clear in view of the specification that the “charging current” flows from the generator to the vehicle battery (specification, paragraph [00026]). This is the typical manner in which a battery is charged.

In addition, it is alleged that the phrase “the additional consuming device is not supplied” in claim 2 is not clear since there is no disconnecting device to stop the supply of power. Applicant respectfully traverses this allegation. One way to stop the supply of power to the additional consuming device is to turn off the device (e.g., turning off the auxiliary heater). By turning off the device, it does not typically draw any power from the generator. Also, according to the specification, a control element 15 is provided that can adjust the resistance of the additional consuming device 5 (specification, paragraph [00026]). The resistance can be adjusted such that the additional consuming device 5 does not draw any power from the generator.

Additionally, it is alleged that the phrase “the additional consuming device is supplied with power by the generator” in claim 3 is not clear since there is no disconnecting device to stop the supply of power from the battery. Applicant respectfully traverses this allegation. In the prior paragraph, this issue has been addressed.

Furthermore, it is alleged that the use of the term “and/or” makes the claim language confusing because it is not clear what is being claimed. In addition, it is alleged that the term “or” should only be used with alternate terms. In response, claims 4, 5, 12, and 13 are amended to delete the objected use of the terms “and/or” and “or”.

V. Claim Rejections – 35 U.S.C. 103

According to the Office Action, claim 1 stands rejected under 35 U.S.C. 103(a) for allegedly being unpatentable over U.S. Patent 4,290,109 issued to Taniguchi et al. Claim 2 stands rejected under 35 U.S.C. 103(a) for allegedly being unpatentable over the Taniguchi Patent in view of U.S. Patent 5,327,068 issued to Lendrum. Claims 6 and 7 stand rejected under 35 U.S.C. 103(a) for allegedly being unpatentable over the Taniguchi Patent in view of U.S. Patent 4,755,734 issued to Komurasaki et al. For the following reasons, these rejections are respectfully traversed.

The claimed invention relates to a system and method of controlling the charging of a vehicle battery and the supplying of electric power to an additional consuming device in a system environment comprising a generator, the vehicle battery, a consuming device, and the second consuming device. According to the claims, the generator supplies the additional consuming device only when the power requirement of the consuming device is met. In addition, the controlling of the charging current of the vehicle battery and the power supplied to the additional consuming device occurs if the following conditions are met: (1) when

the power demand of the additional consuming device is not fully met, (2) when the charging current is higher than a limit value, (3) and when the generator power additionally permits the supplying of the additional consuming device. Such features are neither described nor suggested in the primary cited reference, the Taniguchi Patent.

The Taniguchi Patent does not relate at all to the charging of the vehicle battery. Instead, the Taniguchi Patent describes a system for monitoring the voltage of a vehicle battery, and providing a warning signal if an abnormal voltage condition of the battery is detected. As discussed in the Taniguchi Patent, if the central processing unit (CPU) 13 detects that the battery terminal voltage V_s is lower than a reference terminal voltage V_A (given by equation (2)), the CPU 13 activates the warning device 15. (col. 6, lines 26-34). Again, the Taniguchi Patent is directed to detecting abnormalities with the battery voltage; whereas the claimed invention is directed at controlling the charging current to a vehicle battery in response to power demanded by an additional consuming device, in a situation where the power supplied to a consuming device (e.g., electronics related to engine operation and safety) should not be compromised.

The other secondary references, namely the Lendum and Komurasaki Patents, also do not describe or suggest the claimed invention.

VI. New Claims

New claims 14-27 are added herein by amendment.

VII. Conclusion

In view of the foregoing amendments and remarks, allowance of this patent application is respectfully requested.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response. Please charge any such fee or any deficiency in fees, or credit any overpayment of fees, to Deposit Account No. 05-1323 (Docket 080437.53095US).

Respectfully submitted,

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Dated: Feb. 4, 2005

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2-4-2005
Date

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